CLAIMS:

1. In the process of sulfur oxide sorption wherein a gas containing sulfur oxide is contacted at elevated process temperature with a solid sorbent material to remove sulfur oxide from the gas, the improvement which comprises:

solid sorbent material comprising at least one layered magnesia-rich chlorite-type phyllosilicate having a crystalline structure containing alternating layers of brucite structure and silicate structure.

2. The process of sulfur oxide sorption according to Claim 1 wherein said phyllosilicate contains about 10-30 weight percent magnesium oxide.

3. The process of sulfur oxide sorption according to Claim 1 wherein said solid sorbent material has deposited thereon an effective amount of oxidative metal catalyst.

4. The process of Claim 3 wherein said solid crystalline composition contains cerium oxide and vanadium pentoxide.

5. The process of Claim 3 wherein said phyllosilicate consists essentially of amesite.

6. The process of Claim 1 wherein said solid crystalline composition consists essentially of chlorite containing about 14 to 29 wt% magnesia and hydrotalcite rich in magnesia.

7. In the process of cracking a heavy hydrocarbon feed stock containing sulfur compounds, wherein a gas phase containing sulfur oxide is contacted at process temperature in the range of 700° to 820° C with a solid sorbent material to remove sulfur oxide from the gas; the improvement wherein said solid sorbent material comprises at least one magnesia-rich layered phyllosilicate having alternating silicate and brucite layers.

8. In the process of according to Claim 7 wherein said phyllosilicate contains about 10-30 weight percent magnesium oxide.

9. In the process of Claim 7 wherein said phyllosilicate consists essentially of amesite.

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10. In the process of Claim 7 wherein said solid sorbent material contains hydrotalcite consisting predominately of magnesia.

11. In the process of sulfur oxide sorption wherein a gas containing sulfur oxide is contacted at elevated process temperature with a solid sorbent material to remove sulfur oxide from the gas, the improvement which comprises magnesia-rich solid sorbent material containing hydrotalcite consisting predominately of magnesia.

12. A process for sulfur oxide abatement comprising:

contacting a gaseous body containing sulfur oxide at elevated process temperature with a solid sorbent material to remove sulfur oxide from the gas;

said solid sorbent material comprising at least one layered phyllosilicate having alternating silicate and brucite layers and contains about 10-30 weight percent magnesium oxide

13. The process of Claim 12 for sulfur oxide abatement wherein the gaseous body includes a vapor phase in the fluidized bed cracking of hydrocarbons; and wherein sulfur dioxide is formed and then converted at elevated temperature, with solid sorbent material having an oxidation metal to convert sulfur dioxide to sulfur trioxide.

14. The process of Claim 12 for sulfur oxide abatement wherein the solid sorbent is regenerated and recyled, thereby enhancing sulfur oxide sorption properties.

15. A sorbent composition comprising a mixture of 10 to 90 parts by weight of magnesia-rich chlorite containing about 10-30 weight percent MgO and 10 to 90 parts by weight of hydtrotalcite containing at least 50 weight percent MgO.

16. A method for making solid sorbent particles containing a mixture of:

(a) a first solid sorbent material comprising at least one layered magnesia-rich chlorite-type phyllosilicate crystalline sheet having a crystalline structure containing alternating layers of brucite structure and silicate structures, and

(b) a second solid material comprising crystalline metal oxide and/or salt compounds ; comprising the steps of:

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admixing particulate solids (a) and (b) to form a dry solids blend of at least two different crystalline solids;

recovering a comminuted solids blend having an average particle size of about 1-5 microns;

forming an aqueous slurry of the comminuted solids blend, wherein the aqueous slurry contains surfactant comprising acid stable fluorohydrocarbon;

drying the aqueous slurry to form agglomerated particles having an average size range greater than about 20 microns; and

recovering dry agglomerated particles having enhanced attrition resistance and particle size uniformity.

17. In the process of sulfur oxide sorption wherein a gas containing sulfur oxide is contacted at elevated process temperature with a solid sorbent material to remove sulfur oxide from the gas, the improvement which comprises:

solid sorbent material comprising at least one layered magnesia-rich crystalline material having layered brucite structure, wherein the brucite material is predominately magnesia.

18. The process of Claim 17 wherein the sorbent composition comprises a mixture of magnesia-rich chlorite and hydtrotalcite in a weight ratio of about 10:90 to 90:0 chlorite:hydtrotalcite.

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